

REMARKS

The Office Action mailed on May 9, 2003, has been received and reviewed.

Claims 1-23 and 36-49 were previously pending and under consideration in the above-referenced application. Of these, claims 1-6, 8-17, and 36-40 stand rejected. It has also been indicated that claim 7 recites allowable subject matter. Accordingly, the subject matter of claim 7 has been incorporated into independent claim 1. Claims 18-23 and 41-49 have been allowed.

Reconsideration of the above-referenced application is respectfully requested.

Rejections Under 35 U.S.C. § 102(b)

Claims 1-6, 10-12, 14-16, 36, and 40 stand rejected under 35 U.S.C. § 102(b) as being anticipated by the subject matter described in Japanese Patent No. 58-157146 of Watanabe (hereinafter "Watanabe").

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single reference which qualifies as prior art under 35 U.S.C. § 102. *Verdegaal Brothers v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Watanabe describes an assembly that includes a flip-chip type semiconductor die with bond pads on an active surface thereof and a substrate with terminals that are arranged to mirror the arrangement of bond pads on the active surface of the semiconductor die. Conductive structures are positioned between the bond pads and their corresponding terminals. Spacers, which are formed from photoimageable material and are located around the periphery of the semiconductor die, are also positioned between the active surface of the semiconductor die and the terminal-bearing surface of the substrate. The spacers appear to be configured to space the active surface of the semiconductor die a fixed distance apart from the opposed surface of the substrate.

Independent claim 1, as amended and presented herein, recites a method for modifying a semiconductor die which includes forming at least one stabilizer on or securing at least one

stabilizer to an active surface of a semiconductor die. The at least one stabilizer is configured to spacer the semiconductor die substantially a fixed distance apart from a higher-level substrate. Additionally, amended independent claim 1 recites that the at least one stabilizer includes at least two superimposed, contiguous, mutually adhered layers of dielectric material.

It is respectfully submitted that Watanabe does not expressly or inherently describe that any of the spacers described therein includes two or more superimposed, contiguous, mutually adhered layers. In fact, this point has already been acknowledged by the Office, as indicated at pages 6 and 7 of the outstanding Office Action.

Accordingly, it is respectfully submitted that, under 35 U.S.C. § 102(b), amended independent claim 1 is allowable over Watanabe.

Claims 2-6, 10-12, and 14-16 are each allowable, among other reasons, as depending either directly or indirectly from claim 1, which is allowable.

Independent claim 36, as amended and presented herein, recites a method for electrically bonding a semiconductor device component having a surface and conductive structures protruding from said surface to a substrate having contacts positioned correspondingly to the conductive structures. The method of amended independent claim 36 includes stereolithographically forming at least one stabilizer structure comprising a dielectric material on at least one of the semiconductor device component and the substrate for disposal therebetween. In addition, the semiconductor device is inverted and positioned on the substrate such that the conductive structures protruding from the surface of the semiconductor device component contact corresponding contacts of the substrate. Amended independent claim 36 also recites that the conductive structures are bonded to their corresponding contacts.

As acknowledged at page 7 and 8 of the outstanding Office Action, Watanabe does not expressly or inherently describe the use of a stereolithographic fabrication process to form stabilizers or spacers. As such, under 35 U.S.C. § 102(b), amended independent claim 36 is allowable over Watanabe.

Claim 40 is allowable, among other reasons, as depending from claim 36, which is allowable.

In view of the foregoing, it is respectfully requested that the 35 U.S.C. § 102(b) rejections of claims 1-6, 10-12, 14-16, 36, and 40 be withdrawn.

Rejections Under 35 U.S.C. § 103(a)

Watanabe

Claim 9 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over the teachings of Watanabe.

Claim 9 is allowable, among other reasons, as depending either directly or indirectly from claim 1, which is allowable.

Watanabe in View of Kuniaki

Claims 8 and 13 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the teachings of Watanabe, in view of the teachings of Japanese Patent No. 10189653 of Kuniaki.

Claims 8 and 13 are both allowable, among other reasons, as depending from claim 1, which is allowable.

Watanabe in View of Liang

Claim 17 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over the teachings of Watanabe, in view of teachings from U.S. Patent 5,639,696 to Liang (hereinafter "Liang").

Claim 17 is allowable, among other reasons, as depending indirectly from claim 1, which is allowable.

Watanabe in View of Blanton

Claim 37 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over the teachings of Watanabe, in view of the teachings of U.S. Patent 5,220,200 to Blanton.

Claim 37 is allowable, among other reasons, for depending from claim 36, which is allowable.

Watanabe in View of Ghaem

Claim 38 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over the teachings of Watanabe, in view of teachings from U.S. Patent 6,046,910 to Ghaem (hereinafter "Ghaem").

Claim 38 is allowable, among other reasons, as depending from claim 36, which is allowable.

Watanabe in View of Ghaem and Liang

Claim 39 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over the teachings of Watanabe, in view of Ghaem and Liang.

Claim 39 is allowable, among other reasons, for depending indirectly from claim 36, which is allowable.

Allowable Subject Matter


It has been indicated that claim 7 recites allowable subject matter. This indication is gratefully acknowledged. The limitations of claim 7 have been incorporated into independent claim 1.

The allowance of claims 18, 19-23, and 41-49 is also noted with appreciation.

CONCLUSION

It is respectfully submitted that each of claims 1-6, 8-23, and 36-49 is allowable. An early notice of the allowability of these claims is respectfully solicited, as is an indication that the above-referenced application has been passed for issuance. If any issues preventing allowance of the above-referenced application remain which might be resolved by way of a telephone conference, the Office is kindly invited to contact the undersigned attorney.

Respectfully submitted,



Brick G. Power
Registration No. 38,581
Attorney for Applicants
TRASKBRITT, PC
P.O. Box 2550
Salt Lake City, Utah 84110-2550
Telephone: 801-532-1922

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